AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Please cancel Claims 1-37 and add Claims 38-76 as follows:

1-37.   (Canceled)

38.   (New) An arrangement for serving information requests, comprising:

a plurality of informational servers connected to a communications network, all of the informational servers having a common address on the communications network and serving a set of information to clients, each of the informational servers being configured to receive a transaction request associated with an individual transaction and to provide a response to each transaction request; and

a content director connecting the informational servers to the communications network and distributing transaction requests among the informational servers comprising:

a flow switch that parses plain text transaction requests to locate selected fields, selects an appropriate informational server to service each transaction request, and thereafter forwards at least portions of the parsed transaction requests to a selected one of the informational servers; and

a cryptographic module that decrypts, prior to parsing and informational server selection by the flow switch, cipher text transaction requests and provides plain text transaction requests to the flow switch, wherein, prior to decryption, the cipher text transaction requests have not been routed by another flow switch.

39.   (New) The arrangement of claim 38, wherein, first and second encrypted transaction requests are received from different clients having a common electronic address and served substantially simultaneously by different informational servers, wherein at least some of the responses include a cookie, wherein the cookie is generated by the informational

5   server previously assigned by the flow switch to service transaction requests from the client, and wherein the flow switch uses at least one of an invariant, a cookie, and a tag in the parsed plain text equivalent of each transaction request to select an appropriate informational server to service each of the first and second transaction requests.

40.   (New) The arrangement of claim 38, wherein the content director further comprises:

a cache that stores a plurality of objects corresponding to transaction requests associated with the plurality of informational servers, the objects comprising a hot invariant

5   table identifying information frequently requested from the informational servers, the hot invariant table including, for each invariant identifying corresponding information, a hit counter indicating a number of transaction requests, received over a determined time interval, requesting the corresponding information; and

a cache processor that accesses the plurality of objects in response to communications

10   received from the flow switch.

41.   (New) The arrangement of claim 40, wherein each invariant in the table further has a corresponding timestamp indicating when the respective entry was last updated, and a tag identifying a corresponding informational server providing the corresponding information.

42.   (New) The arrangement of claim 40, wherein the content director further comprises:

a digest generator that generates, when the hit counter for an invariant indicates at least a threshold transaction request receipt frequency, a digest value pointing to the location

5   in the table where the corresponding entry is stored; and

a digest store that stores the digests corresponding to frequently requested content.

43.   (New) The arrangement of claim 42, wherein the digest store includes a digest value for each frequently requested invariant.

44.   (New) The arrangement of claim 40, wherein, when the hit counter for an invariant indicates at least a threshold transaction request receipt frequency, the information corresponding to the invariant is served by a cache informational server and not an origin informational server.

45.   (New) The arrangement of claim 40, wherein, when the hit counter for an invariant falls below a threshold transaction request receipt frequency, the information corresponding to the invariant is served by an origin informational server and not a cache informational server.

46.   (New) The arrangement of claim 42, wherein the digest value is determined according to the following equation:

$L = h(K)$, where $0 \le L \le M$, for all keys K, where K is at least a portion of the invariant, h is the hash function, L is the location of K in the table, and M is the size of the table.

47.   (New) The arrangement of claim 38, further comprising:

at least one traffic manager located between the content director and one or more clients to effect load balancing across a plurality of content directors.

48.   (New) The arrangement of claim 38, wherein the content director includes a current connection table listing active connections between servers and clients, the current connection table comprising, for a selected invariant, a session identifier identifying a session with a client, a persistency timestamp indicating when a last transaction request was received from a client for the selected invariant, and cookie name and value.

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49.   (New) The arrangement of claim 38, wherein the flow switch is operable to tag a transaction response, the tag identifying an informational server generating the transaction response.

50.   (New) The arrangement of claim 49, wherein at least some of the responses include a cookie, wherein the cookie is generated by the informational server previously assigned by the flow switch to service transaction requests from the client, and wherein the cookie is different from the tag.

51.   (New) The arrangement of claim 50, wherein the tag is concatenated to the cookie.

52.   (New) The arrangement of claim 50, wherein, during a first time interval, the flow switch is in a tagging mode in which the switch generates and appends tags to transaction responses and, during a second different time interval, the switch operates in a digesting mode in which digests are generated, invariant hotness is monitored, and transaction

5   requests are routed to informational servers based on requested invariant hotness and/or cookie.

53.   (New) In an arrangement comprising a plurality of informational servers connected to a communications network, all of the informational servers having a common address on the communications network and serving a set of information to clients, each of the informational servers being configured to receive a transaction request associated with an

5   individual transaction and to provide a response to each transaction request, a method for serving transaction requests from clients, comprising:

      a cryptographic module decrypting a cipher text transaction request to provide a plain text transaction request to a first flow switch;

the first flow switch parsing the plain text transaction request to locate one or more

10   selected fields;

the first flow switch, based on the one or more selected fields, selecting an appropriate informational server to service the transaction request; and

the first flow switch thereafter forwarding at least portions of the plain text transaction request to a selected one of the informational servers, wherein the cipher text transaction

15   request is decrypted prior to the parsing and selecting steps and wherein, prior to the decrypting step, the cipher text transaction request has not been directed to a flow switch other than the first flow switch.

54.   (New) The method of claim 53, further comprising:

receiving first and second encrypted transaction requests from different clients having a common electronic address, the requests being served substantially simultaneously by different informational servers, wherein at least some of the responses include a cookie,

5   wherein the cookie is generated by the informational server previously assigned by the first flow switch to service transaction requests from the client, and wherein the first flow switch uses at least one of an invariant, a cookie, and a tag in the parsed plain text equivalent of each transaction request to select an appropriate informational server to service each of the first and second transaction requests.

55.   (New) The method of claim 53, further comprising:

maintaining a hot invariant table identifying information frequently requested from the informational servers, the hot invariant table including, for each invariant identifying corresponding information, a hit counter indicating a number of transaction requests, received

5   over a determined time interval, requesting the corresponding information; and

accessing the table to select an informational server to service a transaction request for frequently requested information.

56. (New) The method of claim 55, wherein each invariant in the table further has a corresponding timestamp indicating when the respective entry was last updated, and a tag identifying a corresponding informational server providing the corresponding information.

57. (New) The method of claim 55, further comprising:

generating, when the hit counter for an invariant indicates at least a threshold transaction request receipt frequency, a digest value pointing to the location in the table where the corresponding entry is stored.

58. (New) The method of claim 57, wherein a digest value is generated for each frequently requested invariant.

59. (New) The method of claim 55, further comprising:

when the hit counter for an invariant indicates at least a threshold transaction request receipt frequency, directing a transaction request for information associated with the invariant to a cache informational server.

60. (New) The method of claim 59, further comprising:

when the hit counter for an invariant falls below a threshold transaction request receipt frequency, directing a transaction request for information associated with the invariant to an origin informational server.

61. (New) The method of claim 55, wherein the digest value is determined according to the following equation:

$L = h(K)$, where $0 \leq L \leq M$, for all keys K, where K is at least a portion of the invariant, h is the hash function, L is the location of K in the table, and M is the size of the table.

62.   (New) The method of claim 53, wherein at least one traffic manager is located between the content director and one or more clients to effect load balancing across a plurality of content directors.

63.   (New) The method of claim 53, further comprising:

maintaining a current connection table listing active connections between servers and clients, the current connection table comprising, for a selected invariant, a session identifier identifying a session with a client, a persistency timestamp indicating when a last transaction

5   request was received from a client for the selected invariant, and cookie name and value.

64.   (New) The method of claim 53, further comprising:

during a first time interval, the first flow switch tagging a transaction response, the tag identifying an informational server generating the transaction response.

65.   (New) The method of claim 64, wherein at least some of the responses include a cookie, wherein the cookie is generated by the informational server previously assigned by the first flow switch to service transaction requests from the client, and wherein the cookie is different from the tag.

66.   (New) The method of claim 65, wherein the tag is concatenated to the cookie.

67.   (New) The method of claim 64, further comprising:

during a second different time interval, generating a digest value for frequently requested information, the digest value indicating a location where an object associated with the frequently requested information is stored;

5   monitoring the frequency of transaction requests for information; and

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directing transaction requests to informational servers based on the frequency of request of information and/or a cookie included in at least some of the transaction requests.

68.   (New) A computer readable medium comprising instructions to perform the steps of claim 53.

69.   (New) An arrangement for serving information requests, comprising:

a plurality of informational servers connected to a communications network, all of the informational servers having a common address on the communications network and serving a set of information to clients, each of the informational servers being configured to receive

5   a transaction request associated with an individual transaction and to provide a response to each transaction request; and

a content director connecting the informational servers to the communications network and distributing transaction requests among the informational servers comprising:

first flow switching means for parsing plain text transaction requests to locate

10   selected fields, selecting an appropriate informational server to service each transaction request, and thereafter forwarding at least portions of the parsed transaction requests to a selected one of the informational servers;

decrypting means for decrypting, prior to parsing and informational server selection by the first flow switching means, cipher text transaction requests and providing

15   plain text transaction requests to the first flow switching means, wherein, prior to the decrypting function, the cipher text transaction request has not been directed to a flow switching means other than the first flow switching means.

70.   (New) The arrangement of claim 69, wherein, first and second encrypted transaction requests are received from different clients having a common electronic address and served substantially simultaneously by different informational servers, wherein at least

some of the responses include a cookie, wherein the cookie is generated by the informational

5   server previously assigned by the first flow switching means to service transaction requests

from the client, and wherein the first flow switching means uses at least one of an invariant,

a cookie, and a tag in the parsed plain text equivalent of each transaction request to select an

appropriate informational server to service each of the first and second transaction requests.

71.   (New) The arrangement of claim 69, wherein the content director further

comprises:

a cache that stores a plurality of objects corresponding to transaction requests

associated with the plurality of informational servers, the objects comprising a hot invariant

5   table identifying information frequently requested from the informational servers, the hot

invariant table including, for each invariant identifying corresponding information, a hit

counter indicating a number of transaction requests, received over a determined time interval,

requesting the corresponding information; and

a cache processor that accesses the plurality of objects in response to communications

10   received from the first flow switching means.

72.   (New) The arrangement of claim 71, wherein the content director further

comprises:

a digest generator that generates, when the hit counter for an invariant indicates at

least a threshold transaction request receipt frequency, a digest value pointing to the location

5   in the table where the corresponding entry is stored; and

a digest store that stores the digests corresponding to frequently requested content.

74.   (New) The arrangement of claim 70, wherein, when the hit counter for an

invariant indicates at least a threshold transaction request receipt frequency, the information

corresponding to the invariant is served by a cache informational server and not an origin

informational server and wherein, when the hit counter for an invariant falls below a threshold

5   transaction request receipt frequency, the information corresponding to the invariant is served

by an origin informational server and not a cache informational server.

75.   (New) The arrangement of claim 72, wherein the digest value is determined

according to the following equation:

$L = h(K)$, where $0 \le L \le M$, for all keys K, where K is at least a portion of the invariant,

h is the hash function, L is the location of K in the table, and M is the size of the table.

76.   (New) The arrangement of claim 69, wherein the first flow switching means

is operable to tag a transaction response, the tag identifying an informational server

generating the transaction response, wherein at least some of the responses include a cookie,

wherein the cookie is generated by the informational server previously assigned by the first

5   flow switching means to service transaction requests from the client, wherein the cookie is

different from the tag, and wherein the tag is concatenated to the cookie.